AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of claims in the application.

CLAIMS 1-50. (Canceled)

CLAIM 51. (Currently Amended) In a radio terminal for use in an ad-hoc, peer-to-peer radio system comprising a series of radio terminals, said radio terminal capable of making at least one of an outgoing call or receiving an incoming call, and comprising transceiver means for transmitting and receiving signals from other like terminals of said series of terminals, computer means and memory means for storing program software means therein, the improvement comprising:

said memory means comprising software means for setting the power level of a transmission of control-channel messaging to be transmitted by said transceiver means;

said software means further comprising means for generating routing messaging including said power level set by said means for setting for use in determining the connection path of a call;

said software means further comprising means for determining the optimal connection path of an outgoing call based on least energy use, so that the least amount of energy over a selected route is chosen for completing the call; and

said software means further comprising means for generating a routing table based on the class of service (COS) of data being transmitted, and for reporting at least one of the following types of COS: voice type information, data type information and video type information, whereby subsequent data packets of the same type of COS are transmitted to the same destination on the same path.

CLAIM 52. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 51, wherein said software means comprises message-generating means for generating a routing table based on said least energy use, said routing table comprising time-frame based messaging.

CLAIM 53. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 52, wherein time-frame based messaging is based on time division.

CLAIM 54. (Canceled)

CLAIM 55. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 52, wherein time-frame based messaging comprises a series of time frames (TM) each divided into a series of time slots (TS), one said time slot being used for

transmitting said control-channel (CC) messaging including said power level, said routing messaging, and said optimal path connection of an outgoing call based on least energy use.

CLAIM 56. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 55, wherein other time slots of said series of time-slots based are used for transmitting channel data (CD) messaging information.

CLAIM 57. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 56, wherein said one time slot transmits said control-channel information at a first frequency of FO, and said at other time slots (TS) transmit said data-channel (DC) information at frequencies different from said first frequency and different from each other.

CLAIM 58. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 56, wherein each said time frame (TF) further comprises an inter-frame time gap (IFTG) at the end of each said time frame (TF) in which no communications-information is transmitted, in order to allow time to perform necessary calculations.

CLAIM 59. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 58, wherein said inter-frame time gap (ITFG) has a length different than said time slots.

CLAIM 60. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 52, wherein each said time frame (TF) further comprises a last time slot (LTS) at said first frequency in which is contained initial control communications-information indicating initial presence of said radio terminal in order to start communicating with other said terminals.

CLAIM 61. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 60, wherein said software means further comprises means for switching transmission of initial control communications-information from said last time slot (TS) to another, free, earlier time slot of a subsequent time frame (TF) in order to reduce the chance of collision with other said terminals also initially registering.

CLAIM 62. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 57, wherein said first time slot (TS) for said control-channel (CC) information is transmitted at a first power level, and said other time slots (TS) for said data-channel(DC) information are transmitted at a second power level.

CLAIM 63. (Previously Presented) The radio terminal for use in an ad-hoc, peer-to-peer radio system according to claim 62, wherein said second power level is equal to or less than said first power level, whereby RF interference is reduced.

CLAIM 64. (Currently Amended) A method of selecting an optimal routing path of a call in an ad-hoc, peer-to-peer radio system comprising a series of radio terminals, each said radio terminal comprising transceiver means for transmitting and receiving signals from other like terminals of said series of terminals, computer means and memory means for storing program software means therein, comprising:

(a) creating a service group (SG) of said radio terminals where each said radio terminal of said service group may be connected to any other of said radio terminals of said service group via at least one connecting path;

(b) creating in each said radio terminal of said service group (SG) via said software means connectivity messaging and data transfer plan messaging information for transmission to other said radio terminals of said service group, and for receiving similar said information from said other radio terminals;

(c) delivering said connectivity and data transfer plan information messaging to a configuration channel for transmission to said other radio terminals belonging to the same service group (SG);

(d) said step (b) comprising developing by said software means a utilization map, the power used for transmitting the messaging, and the level of the environmental noise at the transmission site of the transmitting terminal;

(e) said step (b) further comprising using said data transfer plan information messaging for use in adjusting the transmit power level and for determining at least one routing path that matches delay requirements of a class of service (COS) of data being transferred.

CLAIM 65. (Previously Presented) The method of selecting an optimal routing path of a call in an ad-hoc, peer-to-peer radio system according to claim 64, wherein said step (d) comprises:

(f) developing said utilization map with information messaging based on time division on the availability of time slots of a previous time frame based on whether time slots were used in said previous time frame or were unavailable for use.

CLAIM 66. (Previously Presented) The method of selecting an optimal routing path of a call in an ad-hoc, peer-to-peer radio system according to claim 64, further comprising:

(f) transmitting said connectivity and data transfer plan information messaging to other said radio terminals of said service group of radio terminals via said configuration channel;

(g) receiving said connectivity and data transfer plan information messaging at said other radio terminals;

(h) determining the optimal routing path of a call to or from a said radio terminal based on said received connectivity and data transfer plan information.

CLAIM 67. (Previously Presented) The method of selecting an optimal routing path of a call in an ad-hoc, peer-to-peer radio system according to claim 66, wherein:

said step (h) comprises determining the class of service (COS) of a call to be transmitted from a respective said transmitting radio terminal, and selecting said optimal path based on said class of service.

CLAIM 68. (Previously Presented) The method of selecting an optimal routing path of a call in an ad-hoc, peer-to-peer radio system according to claim 67, wherein said step of determining the class of service comprises selecting from one of the following: voice transmission, and data transmission.

CLAIM 69. (Previously Presented) The method of selecting an optimal routing path of a call in an ad-hoc, peer-to-peer radio system according to claim 67, wherein said step of determining the class of service comprises selecting from one of the following: voice transmission, data transmission, and video transmission.

CLAIM 70. (Previously Presented) The method of selecting an optimal routing path of a call in an ad-hoc, peer-to-peer radio system according to claim 67, wherein said step of selecting said optimal path based on said class of service comprises basing the decision on bit error rate (BER) or latency.

CLAIM 71. (Previously Presented) The method of selecting an optimal routing path of a call in an ad-hoc, peer-to-peer radio system according to claim 68, wherein said step of selecting said optimal path based on said class of service comprises basing the decision on bit error rate (BER) for data transmission, and on latency for voice transmission.

CLAIM 72. (Previously Presented) The method of selecting an optimal routing path of a call in an ad-hoc, peer-to-peer radio system according to claim 71 wherein said step of selecting said optimal path based on said BER comprises determining the smallest path loss relative to said other terminals from which it has received similar messaging; said step (h) comprising initiating a request-to-register message in said connectivity messaging to register with the closest available other said radio terminal for serving as at least a first node of said optimal path.

CLAIM 73. (Currently Amended) A method of reducing radio interference in an ad-hoc, peer-to-peer radio system comprising a series of radio terminals forming a service group, each said radio terminal comprising transceiver means for transmitting and receiving signals from

other like terminals of said series of terminals, computer means and memory means for storing program software means therein, where a call for sending packet data from one radio terminal may be connected utilizing at least one other said radio terminal as a node in the routing connection of the call to a destination other said other radio terminal, comprising:

(a) transmitting connectivity messaging from said one radio terminal to at least one other radio terminal of said service group;

(b) said step (a) comprising transmitting said connectivity messaging using time division signaling having a series of time frames (TF) with each said time frame consisting of a plurality of time slots (TS);

(c) said step (b) comprising dedicating one of said time slots (TS) of each said time frame (TF) as a configuration channel in which said connectivity messaging is transmitted;

(d) said step (b) comprising dedicating other of said time slots (TS) of each said time frame (TF) as data channels in which data information messaging is transmitted;

(e) said step (b) comprising transmitting information pertaining to increasing a level of transmit power according to a class of service (COS) of transmitted data; and

(f) said step (b) comprising transmitting said connectivity messaging of said configuration channel of at a power level equal to or greater than the power level at which said data information on said data channels is transmitted.

CLAIM 74. (New) A method of selecting an optimal routing path of a call in an ad-hoc, peer-to-peer radio system comprising a series of radio terminals, each said radio terminal comprising transceiver means for transmitting and receiving signals from other like terminals of said series of terminals, computer means and memory means for storing program software means therein, comprising:

(a) creating a service group (SG) of said radio terminals where each said radio terminal of said service group may be connected to any other of said radio terminals of said service group via at least one connecting path;

(b) creating in each said radio terminal of said service group (SG) via said software means connectivity messaging and data transfer plan messaging information for transmission to other said radio terminals of said service group, and for receiving similar said information from said other radio terminals;

(c) delivering said connectivity and data transfer plan information messaging to a configuration channel for transmission to said other radio terminals belonging to the same service group (SG);

(d) said step (b) comprising developing by said software means a utilization map, the power used for transmitting the messaging, and the level of the environmental noise at the transmission site of the transmitting terminal;

(e) said step (b) further comprising using said data transfer plan information messaging for use in adjusting the transmit power level and for determining at least one routing path;

(f) transmitting said connectivity and data transfer plan information messaging to other said radio terminals of said service group of radio terminals via said configuration channel;

(g) receiving said connectivity and data transfer plan information messaging at said other radio terminals;

(h) determining the optimal routing path of a call to or from a said radio terminal based on said received connectivity and data transfer plan information;

wherein said step (h) comprises determining the class of service (COS) of a call to be transmitted from a respective said transmitting radio terminal, and selecting said optimal path based on said class of service;

wherein said step of determining the class of service comprises selecting from one of the following: voice transmission, and data transmission;

wherein said step of selecting said optimal path based on said class of service comprises basing the decision on bit error rate (BER) for data transmission, and on latency for voice transmission;

wherein said step of selecting said optimal path based on said BER comprises determining the smallest path loss relative to said other terminals from which it has received similar messaging; and

said step (h) comprises initiating a request-to-register message in said connectivity messaging to register with the closest available other said radio terminal for serving as at least a first node of said optimal path.